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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* YEN-FU CHEN and JOHN W. DUNSMOIR

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Appeal 2009-002504  
Application 10/756,919<sup>1</sup>  
Technology Center 2600

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Decided: November 3, 2009

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Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and MARC S.  
HOFF, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> The real party in interest is International Business Machines Corporation.

## STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a Final Rejection of claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Appellants' invention relates to a method, computer program product, and system for performing handwriting recognition of a language (such as Chinese or Korean) having character stroke order rules. Handwritten stroke input is processed and a stroke parameter set is calculated. The stroke parameter set is compared against a reference character dictionary which contains a plurality of reference parameter sets each defining attributes of reference character strokes. At least one of the reference parameter sets is excluded from comparison with the stroke parameter set based on an identified stroke sequence number (Spec. 2, 4).

Claim 1 is exemplary of the claims on appeal:

1. A method for performing handwriting recognition for handwritten characters of a language having character stroke order rules, the method comprising the computer implemented steps of:
  - storing a plurality of respective reference parameter sets in a reference character dictionary, wherein each of the plurality of respective reference parameter sets corresponds to a reference character stroke of a reference character, wherein each of the plurality of respective reference parameter sets has an associated reference sequence number;
  - receiving a stroke parameter set derived from user input of a handwritten stroke, wherein the handwritten stroke is one of a plurality of strokes required for writing a character;
  - identifying a stroke sequence number of the stroke parameter set; and
  - responsive to identifying the stroke sequence number, comparing the stroke parameter set with at least those of the plurality of respective reference parameter sets having their associated reference sequence number equal to the stroke sequence number, wherein the comparing excludes at least one of the plurality of respective reference parameter sets.

The Examiner relies upon the following prior art in rejecting the claims on appeal:

Izumi	US 2003/0099398 A1	May 29, 2003
Ito	US 6,694,056	Feb. 17, 2004

Claims 10-15 stand rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.<sup>2</sup>

Claims 1-4 and 6-20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ito.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ito in view of Izumi.

Throughout this decision, we make reference to the Appeal Brief (“App. Br.,” filed December 28, 2007) and the Examiner’s Answer (“Ans.,” mailed March 7, 2008) for their respective details.

## ISSUES

With respect to the § 101 rejection, Appellants argue that claim 10 was amended to recite only (statutory) recordable-type media, and to exclude (nonstatutory) transmission-type media, and thus that the Examiner’s interpretation of the language of claim 10 is erroneous (App. Br. 12).

With respect to the rejections under § 102, Appellants argue that Ito does not teach that each of the plurality of respective reference parameter sets has an associated reference sequence number (App. Br. 13-14), that Ito

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<sup>2</sup> In the Examiner’s Answer, the Examiner withdrew the § 101 rejection of claim 1.

does not teach comparing the stroke parameter set with at least those of the plurality of respective reference parameter sets having their associated reference sequence number equal to the stroke sequence number (App. Br. 16), and that Ito does not teach that such comparison excludes at least one of the reference parameter sets (App. Br. 16).

With respect to the rejection under § 103, Appellants argue that neither Ito nor Izumi teaches receiving an indication that a user has knowledge of the character stroke order rules (App. Br. 22).

Appellants' contentions present us with the following issues:

1. Have Appellants shown that the Examiner erred in finding that the language of claim 10 encompasses transmission-type media, such that the claim is directed to nonstatutory subject matter?

2. Have Appellants shown that the Examiner erred in finding that Ito teaches that each of the plurality of reference parameter sets has an associated reference sequence number?

3. Have Appellants shown that the Examiner erred in finding that Ito teaches comparing the stroke parameter set with at least those of the plurality of reference parameter sets having their reference sequence number equal to the stroke sequence number?

4. Have Appellants shown that the Examiner erred in finding that Ito teaches excluding at least one of the reference parameter sets from comparison?

5. Have Appellants shown that the Examiner erred in finding that Izumi teaches receiving an indication that a user has knowledge of the stroke order rules?

## FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

### *The Invention*

1. According to Appellants, they have invented a method, computer program product, and system for performing handwriting recognition of a language (such as Chinese or Korean) having character stroke order rules. Handwritten stroke input is processed and a stroke parameter set is calculated. The stroke parameter set is compared against a reference character dictionary which contains a plurality of reference parameter sets each defining attributes of reference character strokes. At least one of the reference parameter sets is excluded from comparison with the stroke parameter set based on an identified stroke sequence number (Spec. 2, 4).

2. Appellants disclose that the processes of the present invention are capable of being distributed in the form of a computer readable medium of instructions. Examples of computer readable media include recordable-type media, such as a floppy disk, a hard disk drive, a RAM, CD-ROMs, [and] DVD-ROMs (Spec. 44).

3. Examples of transmission-type media include digital and analog communications links, [and] wired or wireless communications links using transmission forms, such as, for example, radio frequency and light wave transmissions (Spec. 44-45).

### *Ito*

4. Ito teaches character dictionary 102 which includes data for a plurality of characters (703), each character being defined by a plurality of

strokes (705) and including a field for a number of strokes (704) to write the character properly (Fig. 7; col. 8, ll. 13-22).

5. When a user handwrites strokes on Ito's tablet using a stylus, the coordinate input unit notifies the stroke matching unit of each coordinate string of the strokes (col. 9, ll. 42-45).

6. Ito's stroke matching unit 106 compares the stroke information for each of the strokes with each set of stroke information in the stroke dictionary, fetches closely matching strokes as stroke candidates, and notifies the interval-based character detecting unit 108 of the stroke candidates (col. 9, ll. 51-56).

7. Stroke candidates whose stroke information shows an evaluation value indicating a poor match are excluded from the search target (col. 10, ll. 54-59).

#### *Izumi*

8. Izumi teaches recognizing handwritten character input patterns as one pictorial symbol formed of a plurality of characters (Abstract).

#### PRINCIPLES OF LAW

A transitory, propagating signal is not a "process, machine, manufacture, or composition of matter." Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter. *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007) *reh'g en banc denied*, 515 F.3d 1361 (Fed. Cir. 2008), *cert. denied*, 129 S.Ct. 70 (2008).

"A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art

reference.” *See In re Buszard*, 504 F.3d 1364, 1366 (Fed. Cir. 2007) (quoting *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994)).

Under the doctrine of inherency, if a claimed element is not expressly disclosed in a prior art reference, the reference nevertheless anticipates the claim if the missing element is necessarily present in the reference, and it would be so recognized by skilled artisans. *Rosco, Inc. v. Mirror Lite Co.*, 304 F.3d 1373, 1380 (Fed. Cir. 2002) (citations and internal quotation marks omitted). To anticipate the claim, the missing element must be *necessarily present* in the prior art—not merely probably or possibly present. *Id.*

On the issue of obviousness, the Supreme Court has stated that “the obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007). Further, the Court stated “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 419-420.

“It is well settled that a prior art reference may anticipate when the claim limitations not expressly found in that reference are nonetheless inherent in it. Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.” *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002) (citations and internal quotation marks omitted). “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a



certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations and internal quotation marks omitted).

## ANALYSIS

### SECTION 101 REJECTION OF CLAIMS 10-15

The Examiner states that Appellants' disclosure that "the present invention applies equally regardless of the type of signal bearing media actually used to carry out the distribution" (Spec. 44) amounts to a disclosure that the recordable type medium recited in claim 10 could correspond to a (disembodied) signal, which is neither a process nor a product, but an intangible form of energy, rendering the claim nonstatutory (Ans. 15-16). *See Nuijten*, 500 F.3d at 1357.

We do not agree with the Examiner's position. Appellants' Specification nowhere states that its "computer program product in a recordable-type medium" may be "embodied" as an intangible signal. The very section cited by the Examiner as evidence that Appellants contemplate that its medium may be a signal in fact teaches the opposite. First, the phrase objected to by the Examiner, "signal bearing media," explicitly teaches that any disclosed "signal" is embodied on a tangible "medium." Second, Appellants provide several examples of "recordable-type media" in the same paragraph – "a floppy disk, a hard disk drive, a RAM, CD-ROMs, DVD-ROMs" (FF 2). Through these examples, Appellants have provided a clear definition of the phrase "recordable-type medium" which excludes embodiments (*i.e.*, "transmission-type media," FF 3) considered nonstatutory under *Nuijten*.

Appellants thus have demonstrated error in the Examiner's § 101 rejection of claims 10-15, and we will not sustain the rejection.

SECTION 102 REJECTION

*Claims 1-4 and 6-9*

We select claim 1 as representative of this group of claims, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Appellants argue that Ito does not teach that each of the plurality of respective reference parameter sets<sup>3</sup> (each character stored in memory, which will be used to find proposed matches to user input) has an associated reference sequence number<sup>4,5</sup> (App. Br. 13). We are not persuaded that the Examiner erred, because we find that Ito teaches a character input apparatus including this feature. Ito teaches character dictionary 102 which includes data for a plurality of characters (703), each character being defined by a plurality of strokes (705) and including a field for a number of strokes (704) to write the character properly (FF 4).

Appellants argue that Ito does not teach comparing the stroke parameter set (i.e., the set of strokes most recently input by the user) with at least reference parameter sets having their associated reference parameter

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<sup>3</sup> Appellants define a "reference parameter set" as the set of reference parameters (each set comprising a length, angle, and center parameter, as illustrated in Figure 7) that together define all the strokes needed to draw a particular character. See Figure 9 and Spec. 22-24.

<sup>4</sup> A "reference sequence number" is the proper stroke number of a stroke sequence for writing a character according to an accepted stroke order rule (Spec. 32).

<sup>5</sup> Appellants' "stroke number" is the number of strokes needed to properly write a character, after strokes having directional motion change(s) exceeding a predetermined threshold are broken down into logical strokes (Spec. 27-29).

sequence number equal to the stroke sequence number (i.e., the number of strokes the user just input)(App. Br. 16-18). We do not find this argument persuasive of Examiner error, because we find that Ito teaches such a comparison. When a user handwrites strokes on Ito's tablet using a stylus, the coordinate input unit notifies the stroke matching unit of each coordinate string of the strokes (FF 5). Ito's stroke matching unit 106 compares the stroke information for each of the strokes with each set of stroke information in the stroke dictionary, fetches closely matching strokes as stroke candidates, and notifies the interval-based character detecting unit 108 of the stroke candidates (FF 6). Ito thus teaches comparing the strokes input by the user *at least* with characters in the dictionary that take the same number of strokes to write. The fact that Ito may compare those strokes with other stored characters, *beyond* those requiring the same number of strokes, is immaterial to the question of anticipation, given the open-ended language ("comprising") of the claimed method.

Ito further teaches that, in order to shorten the comparing process, stroke candidates whose stroke information shows an evaluation value indicating a poor match are excluded from the search target (FF 7), thus meeting the claim limitation "wherein the comparing excludes at least one of the plurality of respective reference parameter sets."

Finally, Appellants argue that Ito does not teach equating a reference sequence number to a stroke sequence number (App. Br. 17). This argument is also not persuasive to show Examiner error, because it is not germane to the claimed invention. Representative claim 1 recites comparing the stroke parameter set with *at least* those of the plurality of respective reference parameter sets having their associated reference sequence number equal to

the stroke sequence number. Ito meets the claim because (as discussed *supra*) it teaches comparing the stroke parameter set input by the user with reference parameter sets in its character dictionary, some of which require the same number of strokes to write as the number of strokes used by the user, as well as with other reference parameter sets corresponding to characters requiring different numbers of strokes to write. Appellants' sub-argument that Ito's "stroke number," an arbitrary number assigned to each unique stroke used to write characters, is not equal to the "order of strokes" (App. Br. 18), is similarly not germane to the claimed invention because, as we have shown, the teachings of Ito meet the claim language as reasonably construed.

Because Appellants have not demonstrated error in the Examiner's rejection of representative claim 1, we will affirm the rejection of claims 1-4 and 6-9 under § 102.

#### *Claims 10-15*

Appellants argue the patentability of claims 10-15 for the same reasons expressed with respect to claims 1-4 and 6-9. We therefore affirm the rejection of claims 10-15 under § 102 for the same reasons expressed *supra* in affirming the rejection of claims 1-4 and 6-9.

#### *Claims 16-20*

Appellants argue the patentability of claims 16-20 for the same reasons expressed with respect to claims 1-4 and 6-9. We therefore affirm the rejection of claims 16-20 under § 102 for the same reasons expressed *supra* in affirming the rejection of claims 1-4 and 6-9.

### SECTION 103 REJECTION

The Examiner finds that Izumi teaches receiving an indication that a user has knowledge of the character stroke order rules, essentially inherently, by receiving character input from a user that demonstrates that such user has knowledge of the stroke order rules (Ans. 22).

We consider the Examiner's finding to be erroneous. Izumi does not explicitly teach receiving any indication from a user, separate and apart from the actual entry of characters, that a user has knowledge of the character stroke order rules. Further, the fact that a user enters character strokes in compliance with the stroke order rules may or may not indicate that said user has knowledge of the rules. It is also possible that the user, ignorant of the stroke order rules, used a stroke order coincident with the proper order. It is not *necessarily* true that entry of strokes in correct order indicates that a user has knowledge of the character stroke order rules. Absent the *necessary presence* of an indication of a user's knowledge of the stroke order rules required under *Rosco*, Izumi does not (expressly or) inherently teach the limitations of claim 5.

Therefore, the Examiner erred in stating that the combination of Ito and Izumi results in the prima facie obviousness of claim 5, and we will not sustain the § 103 rejection of claim 5.

### CONCLUSIONS OF LAW

1. Appellants have shown that the Examiner erred in finding that the language of claim 10 encompasses transmission-type media, such that the claim is directed to nonstatutory subject matter.

2. Appellants have not shown that the Examiner erred in finding that Ito teaches that each of the plurality of reference parameter sets has an associated reference sequence number.

3. Appellants have not shown that the Examiner erred in finding that Ito teaches comparing the stroke parameter set with at least those of the plurality of reference parameter sets having their reference sequence number equal to the stroke sequence number.

4. Appellants have not shown that the Examiner erred in finding that Ito teaches excluding at least one of the reference parameter sets from comparison.

5. Appellants have shown that the Examiner erred in finding that Izumi teaches receiving an indication that a user has knowledge of the stroke order rules.

#### ORDER

The Examiner's rejection of claims 1-4 and 6-20 is affirmed. The Examiner's rejection of claim 5 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

Appeal 2009-002504  
Application 10/756,919

AFFIRMED-IN-PART

ELD

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